

# San Luis Drainage

## FEATURE RE-EVALUATION

**T**his second Reclamation newsletter features articles on the progress of the Re-evaluation, including Reclamation's decision to include Land Retirement as part of the Federal action, description of the final disposal options, information on complementary land retirement efforts, stakeholder input, and treatment option pilot studies. This newsletter will provide an update on the progress made by the study team and direct you to additional information via the Web or by mail from Reclamation.

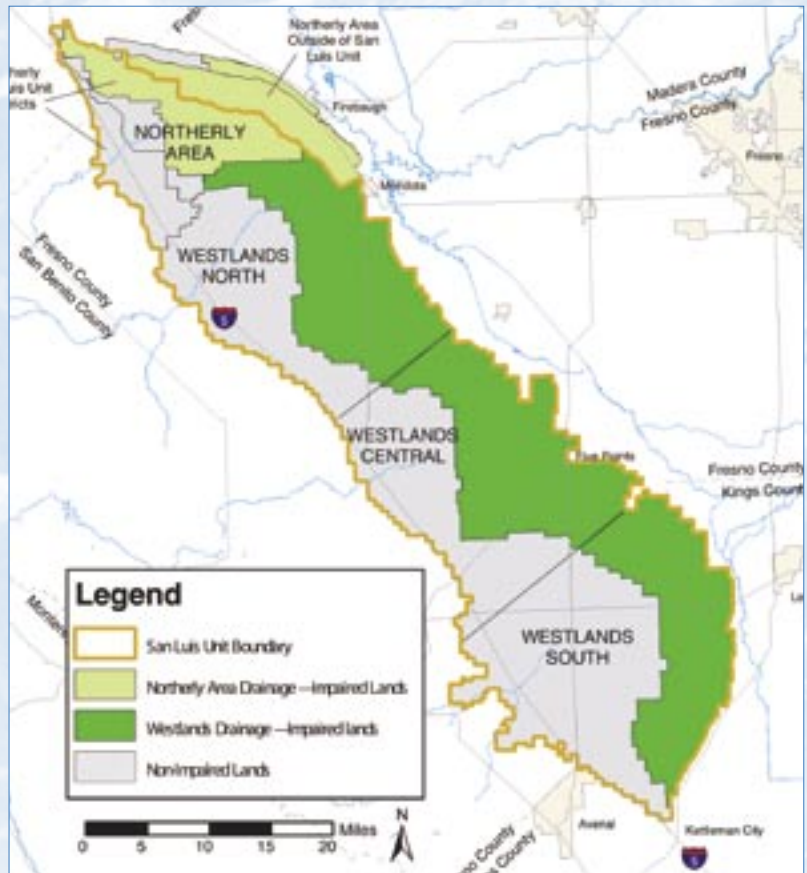
### Re-evaluation Update

In 2000, the 9th Circuit Court of Appeals concluded that Reclamation must act promptly to provide drainage service to the San Luis Unit (SLU) of the Central Valley Project (CVP). However, the Appellate Court allowed Reclamation to consider possible drainage service solutions other than a drain to the Delta. Reclamation's Feature Re-evaluation is evaluating alternatives for providing drainage service to the SLU, including discharge to the Delta and other options evaluated in previous studies.

In December 2002, Reclamation released a Plan Formulation Report (PFR) which defines the alternatives to be considered for providing drainage service to the SLU. The report describes the process of:

- Refining and evaluating preliminary alternatives
- Selecting four final alternatives
- Conducting a preliminary impact analysis
- Identifying the proposed action and final alternative

The completion of this report is consistent with the Plan of Action milestone for identifying a proposed action by December 2002. During the next phase of the Re-evaluation, Reclamation began preparing the Environmental Impact Statement (EIS). Based on public input, Reclamation is now reexamining alternatives to include land retirement.



*Drainage Impaired Land within Study Area*

## Land Retirement

Reclamation has initiated discussions with Westlands Water District, the Exchange Contractors, and other affected districts regarding expanding the scope of the Re-evaluation to include some or all of the additional activities, including land retirement, contained in the *Westside Regional Drainage Plan* (WRDP).

While Reclamation has not included land retirement under the existing plan, various interests, including Westlands, have advocated large-scale land retirement programs and requested that Reclamation evaluate these programs.

The main components of the WRDP proposal include land retirement (up to 200,000 acres in Westlands), ground water management, source control, regional reuse, treatment, and salt disposal. Except for land

## The Alternatives

Reclamation published the PFR in December 2002, describing four alternatives for the collection, treatment, and disposal of drainwater from the San Luis Unit (SLU). The PFR built on information developed in the December 2001 Plan Alternative Report (PAR) and after Reclamation conducted additional analyses, four final action alternatives were identified based on four different disposal locations. Deep Well Injection, an alternative that had been considered earlier in this process, was determined to not be the most appropriate method available for drainwater disposal at this time. The PFR compared the cost of all the alternatives assuming that various levels of land retirement occurred in the area, but land retirement was not evaluated as part of the drainage service alternatives.

The PFR identified the In-Valley Alternative as the proposed action based on lowest cost, shortest time to implement, greatest flexibility to adjust to new technologies or changing conditions and fewest potential impacts to aquatic resources. Reclamation continues to compare the costs, implementation, environmental issues, and public acceptability of these alternatives.

### Common Elements

Reclamation is assuming implementation of these actions for all alternatives:

**On-Farm, In-District Actions.** These actions include drainwater recycling, shallow ground water management, and seepage reduction. These actions are not included in the Federal action to provide drainage service.

**Land Retirement.** The following land

retirement actions are in the process of being implemented, and are included in each of the action alternatives—Britz Settlement, Sumner Peck Settlement and CVPIA Land Retirement—see *Ongoing Retirement Programs* below.

**Drainwater Collection.** As part of the Federal action, Reclamation would construct a closed collection system to collect and convey drainwater from on-farm subsurface tile drains to the regional reuse facility.

**Regional Reuse Facilities.** As part of the Federal action, Reclamation would construct regional reuse facilities, which would use drainwater as an irrigation supply for salt-tolerant crops. The reuse facility would also serve as an underground regulating reservoir to control the flow of reused drainwater to subsequent features.

**Drainwater Treatment and Disposal.** All action alternatives include disposal facilities, and three include drainwater treatment. The treatment technologies and disposal location vary with each alternative.

### In-Valley Disposal Alternative

The In-Valley Disposal Alternative would lie within the San Joaquin Valley and entirely within the boundaries of the drainage study area. In addition to the elements described above that are common to all alternatives, the In-Valley Alternative would reuse drainwater which has gone through with reverse osmosis and biological selenium treatment before disposal in evaporation ponds. Mitigation habitat would likely be required to compensate for potential impacts to waterfowl and

shorebirds exposed to elevated levels of selenium within the evaporation ponds. Reclamation estimates that 3,200 to 6,400 acres of mitigation would be required.

### Ocean Disposal Alternative

The Ocean Disposal Alternative would include the common elements of all alternatives, and reuse drainwater would be collected from the regional reuse facilities and transported by pipeline to the Pacific Ocean for disposal. The pipeline conveyance system would lie within the San Joaquin Valley from near Los Banos southeast to just south of Kettleman City, and then extend southwesterly to the Pacific Ocean at Point Estero. The ocean diffuser would be approximately 1.5 miles offshore, at a depth of 200 feet, approximately 10 miles south of the southern boundary of the Monterey Bay National Marine Sanctuary.

### Delta Disposal Alternative

The Delta Disposal Alternative would include the elements common to all of the alternatives. Also, reuse drainwater would be treated using a biological selenium process before conveyance by canal and pipeline to the Sacramento-San Joaquin River Delta. The canal and pipeline conveyance system would extend the existing San Luis Drain from its current terminus at Mud Slough to the north-northwest through Merced, Stanislaus, San Joaquin, Alameda, and Contra Costa Counties for disposal at one of two locations: Chipps Island (west end of the Delta) or Carquinez Strait (near the town of Crockett). The ocean diffusers at either location would be located 1 mile from shore and at a depth of 18 feet.

## Ongoing Retirement Programs

There are currently three land retirement processes on-going in the project area. Reclamation has indicated that all current action alternatives include the following land retirement actions:

**Britz Settlement, September 3, 2002 (Sumner Peck Ranch, Inc., et al. v. Bureau of Reclamation, et al.)** 3,006 acres in Westlands are being retired permanently under a settlement agreement between the United States, Westlands, and the Britz group of plaintiffs in the Sumner Peck lawsuit.

**Sumner Peck Settlement, December 11, 2002.** Approximately 34,100 acres of farmland are being retired under an agreement between the United States, Westlands Water District, and the Peck plaintiffs of the Sumner Peck lawsuit.

**CVPIA Land Retirement.** Up to 7,000 acres are to be retired within the study area under the existing Central Valley Project Improvement Act (CVPIA) Land Retirement program (2,091 acres retired to date).

# Stakeholder Input

Active stakeholder input has been important for the development of drainage service scenarios currently being considered. Reclamation incorporated public input into the PAR and the PFR. Stakeholders have also provided their own reports describing drainage options, management strategies, and conservation efforts, including *Drainage Without a Drain* and the *Westside Regional Drainage Plan*.

## Drainage Without a Drain

Developed by The Bay Institute, Environmental Defense, and Contra Costa County and its water agencies, out of concern for the Delta's water quality, *Drainage Without a Drain* suggests solutions to the Westside San Joaquin Valley's drain water problem without affecting aquatic environments. The report describes how using the "Four R's" can reduce the drainage problem by 90 percent over a 10 to 15-year period. The proposal recommends the following:

- Reduce the volume of drainage problem water by using more efficient water management practices
- Reuse drain water within the region where it is produced for salt-tolerant crop production, dust control, etc.



- Retire the most severely drainage-impaired lands from irrigated agricultural use
- Reclaim solid salts through treatment, bird-safe solar ponds, and on-farm measures

## Westside Regional Drainage Plan

A proposal from the Westlands Water District, the San Joaquin River Exchange Contractors, and other local stakeholders in a cooperative effort to address shared drainage problems, the *Westside Regional Drainage Plan* features retiring 200,000 acres of drainage impaired lands within the project boundary. The plan identifies "scientifically sound projects,

curtains discharge to the San Joaquin River, and provides for immediate drainage service implementation." In addition to land retirement, other key managing components of the plan are ground water management, source control, regional reuse projects, drain water treatment, and salt disposal. The plan also supports reasonable prices for purchased lands and voluntary land sales. It states that land retirement should not impact other water deliveries to other CVP users, that implementation of the plan should support stable water supplies, and that project impacts must be clearly identified and provide for a transparent, stakeholder-driven process.

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## Land Retirement, *Continued from page 1*

retirement, these components are similar to those in Reclamation's proposed action and are detailed in the PFR.

Reclamation is committed to working cooperatively with stakeholders to fully assess and, if applicable, proceed with land retirement as described in the WRDP proposal. However, to fully incorporate land retirement as an alternative in the Re-evaluation, Reclamation and Westlands agreed to:

- Consider an alternative(s) that does not directly provide drainage service to some or all lands in the Unit but provides an alternative to drainage service
- Extend the schedule for the Re-evaluation process to allow additional time to fully assess the impacts of large-scale land retirement in the study area

A revised Plan of Action was filed with the Court in February 2004.

Reclamation is holding additional public scoping meetings to identify the issues and analysis necessary to fully evaluate the land retirement proposal (see *Upcoming Public Meetings*, page 5). At the same time, Reclamation continues to evaluate the existing disposal alternatives (See *The Alternatives*, page 2).

# Treatment Options: Pilot Studies

**R**eclamation is currently conducting several pilot studies in support of the San Luis Drainage Feature Re-evaluation. These pilot studies provide critical field data to support the implementation of new technologies to facilitate drainage service alternatives.

## Reverse Osmosis (RO) Desalination

A study of RO desalination treatment was recently completed in Westlands Water District. Reclamation, California Department of Water Resources, and Red Rock Ranch, Inc., tested two types of membranes over a period of 1,500 hours at a rate of 6 gallons per minute. It was found that RO treatment was stable at 50 percent recovery of product water. The RO membranes rejected 99 percent of the salts and selenium and 35 percent of the boron.



RO Pilot System at Red Rock Ranch

## Selenium Biotreatment

Reclamation is studying selenium biotreatment with a series of bioreactor tanks containing granular-activated carbon media and selenium-reducing microbes. The carbon media provide surface area to develop a biological film that reduces the dissolved selenium to a solid form that is captured within the biomass. Preliminary results show that selenium in the untreated drainage water was consistently reduced to less than 10 parts per billion after 5 hours. A second phase of pilot testing will optimize operational parameters, evaluate impacts from lower drainage temperatures, and assess the form and fate of selenium that is removed within the bioreactors.



Selenium Biotreatment Pilot System at Panoche Drainage District

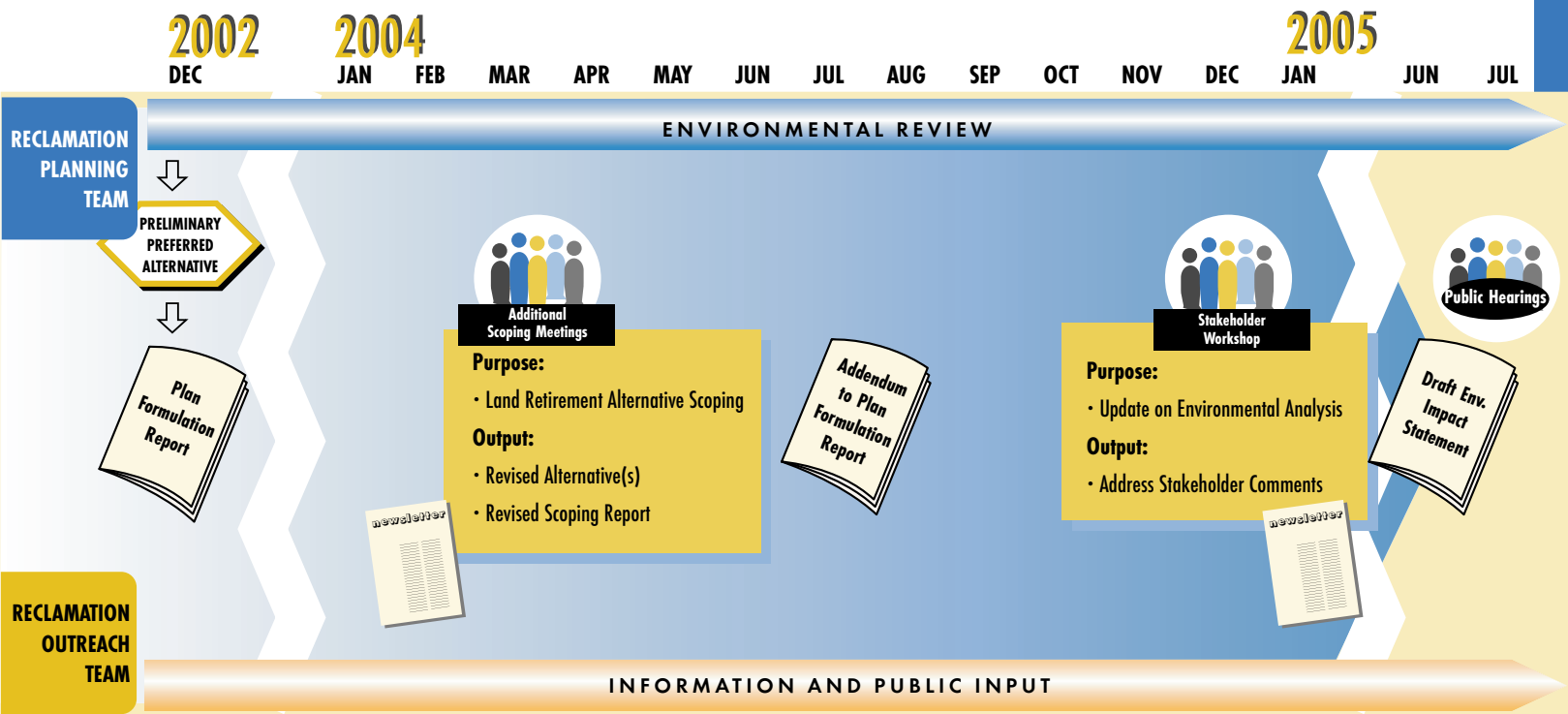
## SolarBee® Evaporation

A SolarBee® unit is an energy-efficient, water circulation machine that increases evaporation from a body of water by 2-3 times. Depending on the model, the SolarBee® draws up to 10,000 gallons of water per minute from below the machine and spreads it across the top of the pond for continuous surface renewal. The SolarBee®'s mixing action and surface renewal greatly accelerate the biological and chemical processes that clean up wastewater and freshwater. Pilot studies are being conducted on two ponds at a facility located near the Salton Sea. Data is still being analyzed; however, it is clear from visual observations that the SolarBee® units produce a mixing action that accelerates the biological and solar processes in the pond. Reclamation could benefit from this type of equipment because it can reduce the size and environmental impacts of evaporation ponds often used in irrigation drainage and desalination projects.



SolarBee® in Action at Test Pond

# What's Next?



## Upcoming Public Meetings

**R**eclamation is holding additional scoping meetings to receive comments on land retirement alternative(s) and related environmental issues. Public input will assist in identifying the significant issues and scope of the environmental analysis related to including land retirement in the proposed Federal action. Submit written scoping comments to Jason Phillips no later than March 31, 2004 (See address under *Contact Us*).

### Sacramento

**March 1, 2004**

1:30 – 3:30 PM

Federal Building, Cafeteria Conference #3  
2800 Cottage Way, Sacramento, California 95825

### Concord

**March 2, 2004**

6:00 – 8:00 PM

Heald College Conference Center, Rooms 1 & 2  
5130 Commercial Circle, Concord, California 94520

### Fresno

**March 3, 2004**

6:00 – 8:00 PM

Piccadilly Inn Shaw, Crown Room  
2305 West Shaw, Fresno, California 93711

### Cayucos

**March 4, 2004**

6:00 – 8:00 PM

Cayucos Veterans Hall  
10 Cayucos Drive, Cayucos, California 93430



## SAN LUIS DRAINAGE FEATURE RE-EVALUATION

U.S. Department of the Interior  
Bureau of Reclamation

2800 Cottage Way  
Sacramento, CA 95825

*Return Service Requested*

FEBRUARY 2004

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## Contact Us!

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